

FLAVONES AND OTHER COMPOUNDS OF *BOEHMERIA TRICUSPIS* AND *B. HOLOSERICEA*

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Key Word Index—*Boehmeria tricuspis* Makino; *B. holosericea* Blume; Urticaceae; astragalín; hyperín; kaempferol 3-rutinoside; rutin; higher alcohols; fatty acids; campesterol; stigmasterol; oleanolic acid.

Plant. *Boehmeria tricuspis*. *Uses.* None. *Source.* Miyagi Prefecture, Japan. *Previous work.* Quercetin, taxifolin, boehmerin, avicularin, (–)-epicatechin, (–)-epiafzelechin-(–)-epicatechin-4,8(or 6)-dimer, (–)-epicatechin-(–)-epicatechin-4,8(or 6)-dimer [1, 2] were isolated from the roots.

Present work. The aerial parts (41 kg) were extracted with hot MeOH. After removal of solvent, the residue was suspended in warm H₂O and then extracted with C₆H₆ and *n*-BuOH, successively. The *n*-BuOH extract was chromatographed on Si gel, the following compounds were isolated and identified by comparison with authentic specimens (TLC, mmp, IR, NMR). Astragalín, C₂₁H₂₀O₁₁·H₂O, mp 167–171°; hyperín, C₂₁H₂₀O₁₂·3/2 H₂O, mp 233–234°; kaempferol 3-rutinoside, C₂₇H₃₀O₁₅·H₂O, mp 181–184°; rutin, C₂₇H₃₀O₁₆·2 H₂O, mp 182–184°.

The aerial parts (23 kg) were extracted with hot MeOH. After removal of the solvent, the residue was suspended in warm H₂O and then extracted with EtOAc. This extract was chromatographed on Si gel, the following acids and their methyl esters (probably mainly as artifacts) were obtained, linoleic acid, stearic acid, palmitic acid, (TLC, GLC, acids: as methyl ester); caffeic acid, (TLC, IR, NMR); a mixture of sitosterol, campesterol and stigmasterol, colourless needles from CHCl₃-MeOH, (TLC, GC).

The roots (102 kg) were extracted with hot MeOH. After removal of the solvent, the residue was suspended in warm H₂O and then extracted with EtOAc and *n*-BuOH, successively. The EtOAc extract was chromatographed on Si gel and gave compounds found above (no caffeic

acid) plus oleanolic acid, colourless needles from MeOH, mp 304–307°, (TLC, mmp, IR, NMR); normal higher alcohols, colourless needles from CH₂Cl₂-Me₂CO. Oxidised with CrO₃-pyridine complex and methylation with CH₂N₂ and GLC to show peaks corresponding to C₂₁ (0·8), C₂₂ (27·1), C₂₃ (5·5), C₂₄ (48·1), C₂₅ (4·1) and C₂₆ (14·4) [3]; normal fatty acids, colourless needles from MeOH. After methylation with CH₂N₂, by GLC was undertaken to find peaks corresponding to C₂₀ (1·0), C₂₁ (6·6), C₂₂ (36·3), C₂₃ (28·9), C₂₄ (24·0) and C₂₅ (3·1).

Plant. *B. holosericea* Blume. *Uses.* None. *Source.* Miyagi Prefecture, Japan. *Previous work.* Rutin was isolated [4].

Present work. The leaves (3·6 kg) were extracted with hot MeOH. After removal of solvent, the residue was suspended in warm H₂O and then extracted with C₆H₆ and *n*-BuOH, successively. The *n*-BuOH extract was chromatographed on Si gel, the following compounds isolated and confirmed, astragalín, hyperín, kaempferol 3-rutinoside, rutin.

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